

REMARKS

The specification has been amended to make editorial changes therein to place the application in condition for allowance at the time of the next Official Action.

The indication that claims 2-4 and 6-7 include patentable subject matter is acknowledged with thanks. In reliance thereon, the subject matter of claim 2 has been added to claim 1 and the subject matter of claim 6 has been added to claim 5. New claims 9-11 correspond to claims 3, 4, and 6 respectively. The Official Action did not consider claim 8, which was added in the Preliminary Amendment filed with the original application. Since claim 8 depends from allowable claim 2 (through claim 3), it is presumed that claim 8 would also be allowable.

New claims 12 and 13 have been added and claims 2-4 and 6-7 made dependent therefrom.

Claims 1 and 5 were rejected as anticipated by HERSH et al. 6,201,872. Reconsideration and withdrawal of the rejection are respectfully requested in view of new claims 12 and 13.

Please note that support for the "unidirectional signal in plane wave form" is found at page 2, lines 14-16 and page 5, lines 20-22. The plane wave form is more commonly known at the (0,0) mode and the lowest wave form. The (0,0) mode propagates normally with all frequencies in a duct. All the higher modes,

such as the (2,0) mode, have a cut-on frequency below which the sound dies away rapidly within the duct (see, for example, HERSH et al. column 15, lines 12-13).

The Official Action points out that HERSH et al. teaches feeding dipole control signals to both elements with a phase shift of  $180^\circ$  between the signals. While the Official Action also alleges that the reference teaches feeding monopole control signals cophasally, this is not believed to be correct. HERSH et al. do not specify the phase of the two monopole arrays. HERSH et al. state at column 15, lines 17-20, concerning the difference in driving the successive monopole groups, that simultaneous control over the upstream and downstream components is achieved by "independently driving the two groups of elements in each of the two monopole arrays." All of the other disclosures concerning the phase shifts relate to generating (2,0) modes in a circular duct by driving, with proper phase shifts, the eight actuators situated on the same cross section circumferentially at the duct perimeter. At column 15, lines 1-23, HERSH et al. discuss generating spinning (2,0) modes in the duct.

In contrast, the invention of claims 12-13 includes detecting sound in a duct that is to be attenuated, generating dipole control signals based on the detected sound for two successive actuator elements in the duct that produce a

unidirectional signal in plane wave form, the generated dipole control signals having a phase shift of  $180^\circ$  with each other, generating monopole control signals based on the detected sound for the two elements, the generated monopole control signals being in phase with each other, and combining the respective dipole and monopole control signals for each of the two elements and feeding the combined signals to the two elements, respectively, to produce the unidirectional signal in plane wave form. These steps (and the corresponding equipment) are not disclosed in HERSH et al. and thus it is believed that the invention of these claims avoids the rejection of record.

In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

Please charge the fee of \$86 for the one extra independent claim added herewith to Deposit Account No. 25-0120.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. \$1.16 or under 37 C.F.R. \$1.17.

Respectfully submitted,

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